

TOWARD A DREAM CALCULUS

A speculative essay on dreaming as a means to knowledge and enlightenment.

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INTRODUCTION

Although no one is certain why we dream, theories about the role that dreams play in human affairs probably predate human history. Certainly from the beginning of recorded history both kings and commoners have tended to believe that dreams serve as the key that unlocks the gift of prophecy. This was the received wisdom of the shamans, sages, oracles and their followers, and the belief that dreams foretell the future is still common now long after the shamans, sages and oracles have become a subdominant force in the global community. Interpreting dreams was the first attempt by humans to travel through time and it still appears to be the most common mode of time travel.

Ironically, it was a TV lecture by an African-American physicist on the possibility of building a machine that could send sub-atomic particles backward through time that sparked my interest in examining the possibilities that dreaming could help me to perceive aspects of reality that are virtually impossible for me to imagine while awake. For example, according to Einstein's Theory of General Relativity space-time is a 4 dimensional manifold with a non-Euclidean metric. This defies the common sense interpretation of the average mind which is grounded in the 3 dimensions of space with its seemingly Euclidean metric. To complicate matters further, most of the leading theoretical physicists believe that space-time is comprised of 10 or 11 dimensions, 6 or 7 of which are either wrapped around themselves as time is wrapped itself on a clock, or perpendicular to Einstein's 4 dimensional space-time, extending space time in 6 or 7 new dimensions.

This is all difficult to imagine, if not impossible, except perhaps by way of dreams, meditative trances, hallucinations, drugs, or near-death experiences. In all of these altered states of consciousness the mind provides examples of phenomena that are consistent with the non-intuitive aspect of modern physics or suggestive of undiscovered connections between modern physics and metaphysics.

Usually these examples fall into one of the three following categories:

1. being in more than one place at a given time, (ie: watching one self in a dream or being someplace that appears to be several different places at the same time);
2. miraculously changing from one place or time frame to another; or
3. overcoming the laws of gravity, momentum, conservation of energy or other limitations imposed by the laws of physics, chemistry, biology, etc.

The first illustrates superposition which is a central axiom in quantum physics. In quantum physics superposition means that until they are recorded subatomic particles are in a state that assumes they are every place at the same time, with probabilities assigned to each place where they might be found.

The second is consistent with space-time travel via wormholes. And the third arises in speculative, physical theories about a multiverse that contains not only our universe but other universes that are subject to different laws of physics; or in theories about metaphysics.

As interesting as this may be, these similarities between dreams and modern physics, or metaphysics, do not provide an obvious calculus for imagining the non-common sense aspects of reality after one awakens. In fact, there is no obvious calculus that enables one to generate, recognize or manipulate these phenomena in the dream state.

What is needed is a set of carefully designed assumptions that can be used to formulate the calculus, and procedures by which the calculus can be tested and confirmed or deconfirmed. Finally, to be useful the dream calculus must enable us to gain new insights into reality that would be difficult, if not impossible, to achieve using methods of reasoning that apply only when we are conscious. This will not be easy.

The superposition of space, the discontinuity of time and the suspension of the laws of science in dreams are confusing and difficult to decipher in an unambiguous way that can be tested reliably. Additionally, most dreams lack the fine grain structural details of reality and dissipate soon after awakening.

DREAMS AND THE UNCONSCIOUS

Most scholars believe that dreams are narratives constructed by the unconscious while we sleep. Also, it is well documented that solutions to some very difficult problems are worked out at the unconscious level, sometimes while asleep, and burst into the conscious mind fully formed. Additionally, the unconscious can have access to secrets and the unknown. For example, Amy Tan, the critically acclaimed Chinese-American writer has stated publicly that information about her grandmother's rape and suicide was shielded from her by her mother but was retrieved by her unconscious and included in one of her novels, much to her mother's consternation.

In general there is a large body of evidence that the unconscious mind serves as both a transmitter and receiver for information to and from the past or the future, and to and from known and unknown places and dimensions. Therefore, it seems certain that a better understanding of the unconscious should provide a key to the attainment of much greater human wisdom and understanding.

But the workings of the unconscious are essentially uncharted. In particular, there are two obvious problems. The first is that there is no understanding of the unconscious as a

coherent system of neurons. This is a brain problem. Second, we do not know how information flows between the brain and the conscious mind, or how this information creates images, qualitative experiences or narratives. This is a brain/mind problem.

Oliver Sacks states this problem succinctly in, "In the River of Consciousness."

"Something beyond our understanding occurs in the genesis of qualia, the transformation of an objective cerebral computation to a subjective experience. Philosophers argue endlessly over how these transformations occur, and whether we will ever be capable of understanding them. Neuroscientists, by and large, are content for the moment to accept that they do occur, and to devote themselves to finding the underlying basis or "neural correlates" of consciousness,¹....

Because remembered dreams are the most common example of the conscious mind being aware of the unconscious brain creating images, qualitative experiences and narratives, it may be that a dream calculus is a good approach for making progress on the second problem.

How does one go about constructing a dream calculus, ie: how does one collect the relevant data needed to develop the assumptions that drive the construction of the calculus, and what are the terms and conditions that determine the validity or reliability of the calculus? These are not simple questions. They are the same questions that gave rise to the mathematics that "explain" the weirdness or spookiness of wave/particle behavior in quantum theory. Einstein objected to quantum theory because it was not a clockwork if/then theory as General Relativity is. Instead it is a highly probabilistic theory which predicts phenomena that defy common sense, but have always been confirmed by experiments.

Roger Penrose, an eminent British mathematician and theoretical physicist believes that the brain actually obeys the laws of quantum physics. Penrose makes the following observation in his essay, " Must mathematical physics be reductionist?"

When I wrote THE EMPEROR'S NEW MIND,
I found it difficult to believe that nerve transmission
could somehow preserve quantum entanglements and
quantum superposition, but I could not think of anything
else. Since then I have learned of another much more promising
possibility from Stuart Hameroff²

According to Hameroff, single-cell organisms such as ameba and paramecia have no neurons yet exhibit complex behavior in the acquisition of food or the avoidance of danger. They do, however, possess a cytoskeleton which contains tube-like threads known as microtubules. Penrose believes that the microtubules, "are very plausibly

regarded as quantum mechanical rather than classical objects.” He states the hypothesis that collective quantum effects that may be taking place in the microtubules might be relevant to brain activity.³

It must be stated that Penrose’s opinion on this subject is very much a minority position. Nevertheless, one must keep in mind that the superposition of places and the travel of information through time are both consistent with quantum theory.

THE EMOTIONAL CHARGE

Creating a conceptual framework for the dream calculus will likely be more difficult than was the case for quantum theory. The calculus must determine accurate correlates that connect dreams (which are among the most extreme and bizarre of all human subjective experiences) to objective reality. It is also more difficult than establishing the neural correlates for consciousness mentioned earlier by Sacks.

One approach is to use the knowledge that dreams seem to respond to the emotionally charged events in the mental or physical environment. The more emotionally charged the environment, the busier the unconscious seems to work to solve ambient problems in dreams.

Based on the literature about mystics, near-death experiencers and others who have experienced transcendence, it seems plausible to believe that an emotional charge force field exists in nature and that the carrier of the emotional charge is information. But information deteriorates in both strength and quality over distance and time. And natural selection has shaped the unconscious to focus or “ tune in “ to process information that relates to immediate problems and concerns. This, after all, is a good strategy for survival. One simply does not dream about Fermat’s Last Theorem after being chased by a lion. Therefore the channels in the mind must be cleared before useful information can be received from other places and times. This is what happens when one meditates, and it is one of the reasons why meditation has become so popular and is being studied by so many neuroscientists. But care must be taken. There are lots of messages out there and they are not always from friendly sources. This is one of the best lessons our dreams (or nightmares) should have taught us.

Another problem is that our dreams are often presented in a language of images that is incomprehensible to us. Many times they just do not make sense. It is as though they are shown to us in a foreign language of images. Finally, there is a lot of static in the multiverse or inside the brain that interferes with the reception of meaningful information.

BASIC ASSUMPTIONS

We now have enough information to give the assumptions that will be used to construct

the dream calculus. We will use A1, A2, A3, ..., to label the assumptions, where A denotes assumption and 1, 2, 3, ..., the respective number of the assumption.

A1. There is a force in nature which we shall refer to as the emotional charge that mediates the emotional states among humans by sharing information among individuals or groups across the vastness of space and time. The more intense the emotional state of the individual or group, the stronger are the currents of information that are shared.

Currently no one knows how the information is encoded, transmitted, received or decoded by the brain. Telepathy is perhaps the most obvious manifestation of the emotional charge, but the consequences of the charge are much more complex. The emotional charge force field requires a methodology or calculus to be fully understood and utilized.

A2. The encoding, transmitting, receiving and decoding of emotional charge information (ECI) is done at the unconscious level of cognition.

This is not surprising. With the exception of reflex actions, all information is vetted by the unconscious. What is different about ECI is that it is transmitted by the unconscious. In general humans communicate using their conscious minds.

A3. As a result of natural selection the brain has become hard wired to first process information that relates to immediate problems or concerns.

A4. The brain can be consciously re-wired to receive and process more ECI.

A4.provides a counterbalance for A3. It states that the tyranny of natural selection can be overcome by choice. Meditation is the most common practice used to accomplish A4. Perhaps the most dramatic results are achieved after a near-death experience (NDE). Author P.M.H. Atwater, a near-death experiencer and devoted NDE researcher, observed that, "there is no denying the fact if not psychic before, the experiencer becomes so afterward; if psychic before, he or she becomes even more so afterwards. Out of body episodes continue, ..., the future is often known before it occurs, (and) extrasensory perception becomes normal and ordinary."⁴

A5. The ECI that is processed by the unconscious during meditation or a NDE can also be processed by the unconscious while we dream.

This is a powerful attribute of dreams. It means that the benefits of meditation or a NDE can be achieved by means of dreams. Furthermore, since we dream every night dreams provide a means by which we can accumulate insights, knowledge and skills that are generally off-limits to us while we are awake.

A6. Techniques that are used to induce the meditative state can also be used to shape

dreams to process ECI.

These techniques include guided imagery, single focusing, open-mindedness, heightened awareness, the cultivation of positive moods and energies, etc.

CONSTRUCTING THE CALCULUS

Because it suggests how the dream calculus might be constituted, we begin by reiterating the purpose of the calculus. The purpose is to help us to accomplish the following:

1. visualize the non-common sense aspects of reality;
2. travel or communicate instantly through space, time or other dimensions;
3. explore connections between physics and metaphysics; and
4. gain insights into difficult problems that have resisted solutions.

The approach is to use our dreams as a medium to create a means by which our conscious mind can have a more productive dialogue with our unconscious mind on critical matters of enlightenment that have been muted for countless generations by the pressures of natural selection. Normally, both the unconscious and conscious minds are overwhelmed by the responsibility to self, kin and community; the pleasures of the flesh and the certainty of death. It takes a NDE or years of practice to break these mindsets.

Thankfully, the mind also seeks peace and contentment, and it is also very curious. It is these attributes that make the dream calculus feasible. When curiosity is bonded to the search for peace and enlightenment the mind is able to travel far and wide without distraction.

WAKING UP IN DREAMS

A basic idea of the calculus is to have the unconscious and conscious minds coexist on equal terms during the dream state. This is referred to as waking up in a dream. Some people can do this naturally; others have learned to do it. Most who do it, do it to control their dreams. This of course is not the perspective of the dream calculus. It is used for learning and enlightenment, not for control.

Being awake in one's dream merely means that one is aware that what is being experienced is a dream and not reality. It is similar to being in a huge movie multiplex where an unimaginable number of movies are being shown simultaneously.

With practice the unconscious mind can learn from the conscious mind what kind of information is being sought in a dream. The unconscious mind then attempts to retrieve the information from inside the brain or from the ECI that permeates the places, time frames and dimensions that constitute reality. This enables the conscious mind to explore desired aspects of reality while dreaming, including those that are metaphysical in nature.

Obviously this will take time. The unconscious mind is unaccustomed to this task. It may find it difficult to reprogram itself to retrieve ECI or to access the solution space for many classes of problems. For some people it may be virtually impossible. The fact that many people who were clinically dead and revived did not have a near-death experience illustrates the extent to which natural selection has programmed the unconscious to attend selectively to the here and now. Not everyone's brain is hard wired to experience transcendence. For some interventions may be necessary. This is the essence of A4.

PROTOCOLS

Being awake in one's dreams and developing a productive dialogue between the unconscious and conscious minds on matters of enlightenment while awake in dreams, are critical success factors for the dream calculus. The calculus must therefore provide protocols that facilitate the following:

1. waking up in dreams;
2. reprogramming the unconscious to more effectively retrieve, process and transmit ECI; and access a wider class of solution spaces; and
3. improving communication between the conscious and unconscious mind while dreaming.

The term protocol is used rather than procedure because the unconscious is truly an unknown, foreign state of consciousness and it must be extended all the respect and courtesies that are extended to a foreign state.

The first protocol can be achieved by asking the unconscious to notify the conscious to wake-up when a dream begins. This will take practice, but it is no more difficult than asking the unconscious to awaken us at a given time before falling asleep. Most of us have developed this skill to an amazing degree of accuracy. It is important that we learn to relinquish this task to the unconscious and not dwell on it as we fall asleep. Otherwise our unconscious will not trust us and fail to complete the task. Instead it is desirable to empty our minds of all thoughts and simply observe all the images that float before us with heightened awareness. But we should not try to focus or retain any particular image. That is likely to retard the falling asleep process. While falling asleep our conscious mind must relinquish control to our unconscious mind.

The second and third protocols are necessary because when we begin to have success

waking up in our dreams we may not find ourselves immersed in the dreams that we wished for. It may be that the unconscious has not yet learned to break its old habit of focusing on current events or concerns. Or it may be that our unconscious may present the desired ECI in images that are confusing to us.

It may be both; a superposition of current concerns, and the desired information couched in confusing images. Sometimes the information may just not be available. Success will require lots of practice weaving the second and third protocols into the warp and woof of our souls.

Both of these protocols are based on lessons learned from long-term meditators and near-death experiencers. It is well documented that people in both groups tend to be much more sensitive to ECI than the average person. These peoples' lives and unconscious minds are generally more focused on non-material things. As a result, their unconscious minds are more in sync with the emotional charge force field than the materially based force fields of nature.

PREPARING TO CROSS OVER

Mystics, meditators, shamans and near death experiencers agree that when crossing the event horizon from one mode of consciousness to another it is critical that the unconsciousness and consciousness minds be in harmony and focused on respect and compassion for all that exists. Ego drives must be extinguished. Instead the mind must accept the interdependence and interconnectedness of all things, and deny the illusion of an independent self. Otherwise the experience is likely to be confusing, meaningless or disastrous.

This applies to sleeping and dreaming. It is imperative that both the conscious and unconscious minds are in the appropriate frame the moment sleep begins. To insure that the right frame of mind exists at this moment it is necessary to transform one's values, attitudes and habits to be consistent with the philosophy that everyone and everything is an interdependent part of a cosmic unity and worthy of love, respect, compassion, understanding and forgiveness. The theory of dependent origination which is so central to Buddhist teaching, should become a way of life.⁵ The praxis required to achieve this transformation comprises the second protocol. Once the transformation is completed, the unconscious will have been reprogrammed to more effectively retrieve, process and transmit ECI, and dreaming will become a more profound and enlightening experience.

LOSING DREAMS

The third protocol is required because the insights and enlightenment acquired during an altered state of consciousness tend to evaporate quickly when one awakens. The feeling may persist but only a vague understanding of the experience endures. Words become

incapable of describing what took place. Only when the unconscious and conscious minds are fully synchronized during the wake stage is the dream experience able to be transmitted to the conscious mind in a comprehensible and useful way. It is then that solutions to problems pop into the mind fully formed. This can happen at any time in the most unlikely places, generally when the conscious mind makes room for an insight into reality or a moment of enlightenment. These are the epiphanies that dreams are made of.

AWAKENING

Obviously competence in the second protocol is a prerequisite for the third protocol. Beyond this I am uncertain about the make up of the third protocol. It may be a process that involves a rewiring of the brain. Prayer and /or meditation are certainly required or useful options. I believe that the moment of awakening is probably the critical factor. To be fully awake in a dream means that you are conscious of the dissolution of the dream. When the dream begins to dissolve it is time to take notes before the events in the dream disappear. But it all happens so fast that there may not be enough time to take adequate notes. Additionally, insights that cohere in the dream, decohere quickly as the dream dissolves. (This also happens with epiphanies.) So before awakening the conscious mind has to request the unconscious mind to pass on the insights or moments of enlightenment to the conscious mind in a coherent way after waking up.

All this may sound like gibberish, but one must remember that everything, including the most glorious insights and epiphanies, are vetted by the unconscious mind. It is the gate-keeper and will always be the gate-keeper. The third protocol simply acknowledges and respects this fact of life. But it will take lots of time and practice to master.

CONCLUSION

This has been a speculative essay on dreaming as a means for acquiring knowledge and attaining enlightenment. The dream calculus that has been outlined in this essay is based on personal experience and research in the fields of meditation, near death experiences and other altered states of consciousness. From personal experience I know that the protocols work. Currently, I am at a low level of competence in the first and second, and just beginning to practice the third. I have had a few epiphanies since I began practicing the protocols, but they all tended to dissipate once my mind drifted to matters dictated by natural selection.

I believe the dream calculus is worthy of further investigation. Research has already demonstrated that dreams are capable of triggering the emergence of new abilities.⁶ Also, the near-death experience literature is full of stories of people who seemingly mastered the calculus.⁷ This literature uses terms that differ from the terms used in this essay. For example, “simultaneity” is used for “superposition” and “self conscious in dreams” for

“waking up in dreams”. Whatever the vocabulary it is clear that altered states of consciousness provide a rich milieu for knowledge and enlightenment.

There are so many similarities between what near-death experiencers say about reality and the latest theories in physics, parapsychology and metaphysics that it is difficult to believe it is simply coincidence. Most striking is the fact that it is the theories in physics that are moving toward the findings of NDE research and not the other way around.

In summary, it seems evident that dreaming, the most common altered state of consciousness needs to be taken more seriously as a means for acquiring knowledge and attaining enlightenment. Humans are in dire need of the dream calculus.

Notes

1. Oliver Sacks, In the River of Consciousness, **New York Review of Books**, January 15, 2004., 43.
2. Roger Penrose, Must Mathematical physics be reductionist?., **Nature's Imagination**, Oxford University Press, New York, 1995, 21.
3. Ibid, 22.
4. P.M.H. Atwater, **Beyond the Light**, Avon Books, New York, 1994, 130.
5. His Holiness the XIV Dalai Lama, **The Art of Living**, Thorsons, London, 2001, 131- 165.
6. Donald A. Treffert and Gregory L. Wallace, Islands of Genius, **Scientific America**, June 2002, 69.
- 7.P.M.H. Atwater, **Beyond the Light**, Avon Books, New York, 1994, 75-78.